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While Critics Howl

NIH Misconduct Chief Says Office Carries On

A small shop within the giant National Institutes of Health, the Office of Scientific Integrity (OSI) was initially battered on Capitol Hill for alleged softness toward scientific miscreants. Recently, however, it was assailed by the new Director of NIH, Bernadine Healy, for what she sees as inattention to rights of the accused. After a stormy upheaval within the office [SGR, August 1: "NIH Director Defends Curbs on Misconduct Office"], OSI's organization and procedures are undergoing scrutiny by NIH and the parent Department of Health and Human Services. SGR Editor Greenberg talked on September 24 with Jules Hallum, who became Director of OSI in April 1990, following retirement as Chairman of Microbiology and Immunology at the Oregon Health Science University. Taking part were OSI Deputy Director Clyde Watkins and Senior Scientist Alan Price. Following is the text, transcribed and edited by SGR.

SGR. Is OSI in operation, or is it becalmed while the studies take place?

Hallum. Very much in operation. This business that we've been "derailed" or "emasculated" and so forth is incorrect.

SGR. What are the studies looking at?

Hallum. The most important one is a management re-

Dining Out With the DC Science Writers—P. 6

view. And contrary to what has been in the press, I asked for that, because I'm new to government, and I find out after I get here, there are very clever people who understand these organizational principles and they're at my disposal. So, we're having a management review that's looking into staffing and organization.

SGR. Dr. Healy takes no part in these reviews since she's recused herself while OSI is investigating a misconduct case that she investigated while she was at the Cleveland Clinic. Is that right?

Hallum. She has recused herself, because there's an active investigation we are dealing with.

SGR. Where does the Cleveland case stand?

Hallum. I can't answer that.

SGR. Weeks, months, or years? After all, the return of
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Quieting the Alarms

Bromley Scoffs at Warnings Of R&D Manpower Shortage

Warnings of impending shortages of scientists and engineers have been a standard theme for decades in the science establishment's appeals for increased federal support for research and training. Having been repeatedly proclaimed, the shortage thesis has come to be accepted as reality in public discourse.

Lately, however, as skeptics raise doubts about the reliability of alarmist manpower projections, the Bush Administration has been discreetly distancing itself from the shortage camp. The strongest sign of repositioning is evident in a talk on September 11 by D. Allan Bromley, the

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In Brief

Rep. John Dingell seems to have plucked all the low-hanging scandals in the groves of science. Following in his tracks, Sen. John Glenn held a hearing last week on "Management of National Science Foundation Grants," but the proceedings were dampened by a General Accounting Office investigator who testified, "For the most part, we found no basis for questioning the charges to the NSF grants that we examined."

No criminal prosecution will result from the NSF Inspector General's probe into allegations of contract irregularities in NSF's Division of Science Resources Studies [SGR July 1]. But the IG will report administrative violations, poor competitive practices, and cozy links with contractors.

Also coming from the IG: A critical report on NSF's decades-long contractual arrangements with the National Academy of Sciences for evaluation of NSF fellowship applications. Competition for the contract has been lacking, the IG will report.

The Academy is discontinuing the Manufacturing Forum, established in 1989 as a meeting ground for corporate chieftains, senior federal officials, and academics. Chaired by Ruben Mettler, retired head of TRW, the Forum experienced good attendance by its 10 industrial and 5 academic members. But their support cooled when the 10 government members—deputy cabinet secretaries and independent agency heads—sought to be represented by subordinates.

Rounds of applause greeted NIH Director Bernadine Healy last week at a "town hall" meeting with the NIH intramural staff. Healy endorsed expansion of the intramural program, vowed to ease procurement red tape, and brought down the house with an announcement of additional parking space on campus.

... Bromley Says Earlier Projections Were Flawed

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President's Science Adviser, at a conference on "Engineers in America's Future: Shortage or Surplus," held in Washington by the Engineering Manpower Commission and the American Association of Engineering Societies.

Citing declines in the college-age pool and a shift away from science and math studies, Bromley acknowledged that "these trends would seem to indicate that this country faces rather severe shortages of scientists and engineers in the near future.

"But," he continued, "I have learned to approach these projections with some caution. Labor markets in this country are remarkably flexible. Particularly in engineering, where many baccalaureate-level engineers can be trained in just a few years, fluctuations in supply or demand generate quick responses."

The position stated by Bromley represents a remarkable turnabout in a relatively short time. In July 1989, at his confirmation hearing before the Senate Committee on Commerce, Science, and Transportation, Bromley matter-of-factly repeated the warnings of shortages that have long emanated from the National Science Foundation.

"NSF surveys," he told the Committee, "have already identified major shortages amounting to more than 100,000 computer scientists per year in the early 1990s and to corresponding shortages in the 35,000-50,000 range in many fields of engineering." He added that "There are corresponding shortages in biomedical science, in biotechnology and in the number of physicians committed to careers in research."

In his recent address, Bromley linked his conversion to an examination of the prophetic powers of the alarm criers. Referring to a retrospective study of manpower modeling and forecasts conducted for the National Science Foundation by Ronald L. Oaxaca and Larry Leslie, economists at the University of Arizona, Bromley said: "None of the models of interest to policymakers had much validity beyond one year. By the end of two years, the model predictions were almost invariably worthless. In these cases, it is the demand numbers that turn out to be wrong; supply numbers are relatively easy to obtain from the educational pipeline and are relatively reliable."

Bromley then turned to history to support his skepticism. In 1962, he recalled, a panel of the President's Science Advisory Committee, "responding to a widespread perception of impending shortages of personnel for the nation's space and military programs, recommended a crash program of support for students and universities.

"Universities responded enthusiastically—in retrospect, much too enthusiastically—so that the 1970 manpower goals were achieved in 1967, and, not surprisingly, the crash program was terminated," Bromley said. He added, "The large number of students, particularly doctoral students, educated in the 1960s in the crash program had difficulties

finding employment in the 1970s. Media reports of these difficulties—frequently exaggerated—influenced a new generation of students to shy away from graduate training in science and engineering."

Bromley assured his audience that he wasn't pointing to a reduced federal role in science and engineering training. But, he continued, "the fundamental uncertainty surrounding manpower projections. . . emphasizes that in training scientists and engineers, we must focus on flexibility and versatility," so that engineers can shift employment as market needs change.

Bromley's reversal on the shortage issue did not affect his standing plea for efforts to encourage more American students to pursue science and engineering careers. He tied that goal to the possibility that many of the foreign students who now fill engineering classes and remain to work here may eventually be lured back to their homelands. And he reiterated the Administration's call for upgrading science in the schools.

This campaign, a centerpiece of Mr. Bush's anemic domestic program, has been aimed at the dual goals of raising scientific literacy in the workforce and putting more students into the educational pipeline that leads to PhDs. Bromley left the impression that the Administration's thinking on advanced training and US manpower needs is in an inchoate state.

Bromley told the meeting of engineers that he endorsed a proposal by Roland Schmitt, President of Rensselaer Polytechnic Institute, for "engineering-based liberal education." The aim would be, Bromley said, to prepare engineers to go on to "broader managerial roles," and to enrich the education of non-engineers.

In support of this proposal, Bromley cited an odd couple: "People trained as engineers are now making many important contributions to society—Boris Yeltsin and John Sununu are only the two examples that come most immediately to mind."

Meanwhile, the belief that the nation is short of scientists

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... Due Process Issue Misunderstood, Hallum Says

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the Director to her responsibilities for OSI depends on clearing up that case.

Hallum. Not years. I would say several months.

SGR. How many professionals do you have in OSI?

Hallum. About 10.

SGR. With about 70 cases on the agenda, it sounds as though your 10 people are spread pretty thin.

Price. Correct that, we're down to nine.

Hallum. I would already have hired more people if this management study wasn't in the works. This should be done by the end of October.

SGR. Dr. Healy and others say that OSI pays too little attention to due process.

Watkins. There's a misperception that we do not provide due process. People seem to associate Perry Mason type due process with due process.

SGR. First of all, what is due process?

Watkins. Well, I'll give you the legal standard, and it's fairness under the circumstances. It's a right to be heard. But the right to be heard does not necessarily translate into a hearing, as people recognize that word with a capital H. And often it's not the most efficient, nor the fairest process. We feel that we offer a fair process, respecting the rights of respondents [i.e., the accused] and complainants and the government. And it's a balancing act. All due process is a balancing act. We provide many points at which respondents can be heard, heard at will. They can provide whatever evidence they wish to provide at any time. They have the right to be interviewed by us and present their side of the story directly to us, face to face, and to the scientific panelists, the expert advisers [assisting OSI]. When we decide to initiate an investigation, we provide notice to the

respondent and to the institution involved that an investigation is to be opened, and what the issues are to be addressed. That's equivalent to providing the charges, although our issues are changeable.

SGR. Does that mean that in the course of an inquiry you can take up an issue that was not listed at the outset?

Watkins. That's correct.

Hallum. That's true in every investigation, isn't it? Even in a scientific investigation.

Watkins. But we would not do that to surprise a respondent. If we were to raise a new issue that wasn't there from the beginning, we would tell the respondent, "You may address this now or you may take time. It's your option."

SGR. The criticism most often raised about due process is the absence in OSI procedures of a right to a confrontation with the accuser.

Watkins. We do not provide for cross-examination with witnesses in our procedures, because our findings do not rely on credibility so much as they rely on documentary evidence. We do provide the opportunity to cross-examine the evidence, if you will, in two ways. We provide access to the relevant evidence to a respondent and we prepare a draft report which includes all of the evidence upon which we intend to rely in coming to our recommended findings and the significance of that evidence and how it relates to the issues. And we provide the respondent and the institution a chance to respond, rebut, adduce new evidence, whatever they want to, with that draft report, so they can make sure that we understand their position and we have all the relevant evidence that they think is appropriate.

SGR. Is there a counterpart to this format in civil or criminal procedure, or is this unique to OSI?

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Manpower

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and engineers persists as a popular article of faith, though in many fields, jobs are scarce. An editorial in the *Washington Post* on September 21, "Math, Science and Uncle Sam," argues for improving the quality and extent of science in the schools. Tests show American students perform poorly in math and science, the editorial states, adding, without explanation: "The evidence also lies in the debilitating shortage of American scientists."

On Capitol Hill, the manpower alarms have drawn the skeptical interest of the Subcommittee on Oversight and Investigations of the House Science, Space, and Technology Committee [SGR September 15: "Scientist Shortage? House Committee Requests Data"]. Heaps of data requested from NSF were delivered to the Subcommittee last week and are now being examined by the staff. No decision has been made at the Subcommittee on the next step, if any.

In political terms, the skepticism works against calls for

a major new federal fellowship program to counter the warned-of shortages. The leading proponent of the fellowship drive is Richard Atkinson, Chancellor of UC San Diego. Two years ago, Atkinson calculated, in a widely publicized paper, that a major shortage of PhDs in science and engineering would peak in about 15 years, with demand at about 18,000 new degree holders and a supply of only 10,500. At present, foreign students account for 30 percent of the PhDs in the physical sciences, 50 percent in math and 60 percent in engineering.

By Atkinson's account, the future is bleak and no time should be lost in providing incentives for Americans to proceed through advanced training.

The evidence in these matters is murky, neither fully supportive of the shortage school, nor conclusive in behalf of the new skeptics. It should be noted that Bromley is merely arguing that the warnings of shortage have proven wrong in the past. He has not dismembered the latest round of warnings.—DSG

... OSI Head Sees Need for "Live-In" Lawyer on Staff

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Watkins. It's unique to administrative law. I don't know of a counterpart in civil or criminal procedures—

Hallum. There needn't be, because in our kind of situation, as the judge in the Abbs case [in Federal Court for the Western District of Wisconsin, SGR February 1] pointed out, there's no property or liberty interest at stake. A grant is not an entitlement. And a grant is given to benefit society, not the scientist. So that due process in the face of no liberty or property issue is a bit strange. They [the court] were, in effect, saying that we offer more due process than we have to. The other point is that in a very real sense, we are the whistle-blower. It's up to us to determine what the scientific issues are. And they can cross-examine us with their attorneys.

SGR. Is any of you an attorney?

Watkins. No. We have one attorney on our staff now, but he's also a scientist.

SGR. Is he working here as an attorney?

Watkins. No, we use the Office of General Counsel in the Department [of Health and Human Services] as our source of legal advice.

Hallum. We get excellent service from NIH's lawyer, Bob Lanman, but I would like to have a live-in lawyer, just for efficiency's sake. We get as much of Lanman's time as we ask for. But maybe we would use a lawyer more if we had a live-in one.

SGR. You've got several highly publicized cases in mid-stream. Are they moving forward while the office is under review and personnel are being diverted by the review?

Hallum. It's having no effect on our major cases.

SGR. OSI's former Deputy Director, Suzanne Hadley, held all the strings on the two big cases, Gallo and Baltimore. She had the papers, she worked with them from the start.

Hallum. We're doing just fine without her. The cases are moving on schedule.

SGR. I understood there was no schedule.

Hallum. Of course, there can't be a schedule in the sense that we'll complete this on Tuesday morning at 10 o'clock. But in the situation where we are held up and not able to move, that is not because of any delay or personnel problem on the part of the OSI. As you know, the United States Attorney has custody of evidence [in the so-called Baltimore case]. The respondent [Thereza Imanishi-Kari, of Tufts University, accused in an OSI draft report of fabricating data in a paper she co-authored with Nobelist David Baltimore] feels it is necessary for her to examine the evidence to make a proper response. And we will not write a final report unless she gets the evidence or refuses to respond.

SGR. The US Attorneys says he won't give it up at present. Therefore, the case is stalled. What are you going to do?

Hallum. Well, we're at a standstill at this point.

SGR. It could go on for years like this.

Hallum. It could. I doubt that it will. If a criminal prosecution opens up in this case, then the right of discovery will provide access to the evidence. Right now, it really requires a decision by the US Attorney.

SGR. Did OSI ever have possession of the notebooks and other materials that Imanishi-Kari insists on examining?

Hallum. Not in any significant way. They were either in the possession of the United States Attorney or the Subcommittee [on Oversight and Investigations, chaired by Rep. John Dingell].

SGR. There are people who say the Baltimore case is in such a state of disarray and confusion that it will eventually fade away inconclusively, that OSI will never resolve it.

Hallum. I disagree. I don't think it's in a state of disarray. There's merely one holdup, which we've described, and that's a holdup that we've endorsed out of fairness to the respondent.

SGR. The NIH Director has expressed a lot of concern about leaks of the draft report in the Baltimore case, and now the Gallo draft report has been leaked and extensively reported in the Chicago Tribune by John Crewdson. A couple of months ago you seemed confident that the leaks had been plugged.

Hallum. I told you that I hoped we had made administrative changes that would make it more difficult to leak. We're required by our policies to give a copy of the draft report to the respondent. Chances are the respondent is not necessarily interested in leaking a report. Up until we changed our policies, we were also required to give it to the whistle-blower. We know that in one case, the whistle-blower, through her attorney, leaked a report because she was involved in a court case. In the case of the leaking of the [report concerning Imanishi-Kari], I cannot prove who leaked it. In the case of the Gallo report—in both of these cases, we have asked the Inspector General to look into who did the leaking. We know it wasn't leaked internally.

SGR. Why are you so confident of that?

Hallum. I don't see how—probably on the basis of knowing the people who work here. I don't see what motive they would have for leaking it. I think it would be too bad for them if the Inspector General finds out that it was leaked from inside. I will cooperate fully with anything drastic the Inspector General wishes to do with this person.

SGR. Why was a subpoena given to Walter Gilbert [Harvard Nobel laureate, from whom the HHS Inspector General sought to determine the source of a copy of the leaked Baltimore report—SGR September 15]?

Hallum. I don't know.

SGR. The subpoena was preceded by an anonymous letter addressed to you saying that Gilbert had a copy of the report.

Hallum. An anonymous letter was addressed to me. I talked to my staff about it, and essentially said, "What do I

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... What Do I Know About Security? OSI Head Asks

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do with something like this?" I've never had an anonymous letter. I sent it through proper channels. I got [NIH counsel] Bob Lanman's advice, and I then forwarded it to the Inspector General's office. It left here. That's all I know.

SGR. Were you consulted about whether Gilbert should be investigated or subpoenaed?

Hallum. No.

SGR. Were you shocked when you heard that he had been subpoenaed?

Hallum. Yes.

SGR. What did you do?

Hallum. Well, what could I do? The subpoena had been given to him. Do I call up Dr. Gilbert and say, "Now is the time not to obey the subpoena. Go to court and fight it"? You think it was my responsibility to get involved with this? I think I did what a responsible government employee was required to do.

SGR. And that is send it up the line and let other people take care of it?

Hallum. That's one way of putting it, yeah. I think a more responsible way of putting it was that I was following the proper channels for documents of this sort. Because I don't have the authority to do anything.

SGR. You could have just thrown it away.

Hallum. We don't work that way here.

Watkins. That would have been a violation of government regulations. Any allegation of criminal activity must be brought to the attention of the OIG [Office of Inspector General].

Hallum. Since we log in all of our mail, I think it would have been irresponsible of me to throw away something that has been logged in as official correspondence.

SGR. Any crackpot note that comes in here is treated with dignity?

Hallum. I'm afraid so.

SGR. Are any further steps being taken to eliminate leaks?

Hallum. I would like to take some more. But I'm a retired university professor. What do I know about security methods? We're going to have some specialists come and try to help us out. We're scientists—

SGR. Specialists from where?

Hallum. I don't know yet. We were just talking about that today. Maybe there's someone from the Inspector General's office that can survey our procedures and tell us. But we don't have really concepts of this degree of security, and we have to learn.

SGR. Is the Inspector General on the trail of the Gallo leak?

Hallum. I don't know if he's gone into action or not. I hope he has. It's very important to us to find out if someone who had signed a confidentiality agreement leaked this. That would be a dishonorable act by that person.

SGR. OSI has been in existence for about two and a half years, and it still seems to be remarkably unsettled.

Hallum. Doesn't it, though.

SGR. You've just reorganized and you're under review for possibly more reorganization.

Hallum. This office opened its door to 70 some cases with two senior staff and one secretary. There's been a rush to keep up with it. There has been actually no time for any staff work to be done here. The pressure of operations has absolutely driven out staff work.

SGR. What do you mean by staff work?

Hallum. To develop an infrastructure and a stable kind of internal organization. It was not that people were unwilling to do this or didn't see the value of it. It was just that they were so swamped. In effect, I've been saying, "Wait a minute, we're going to get into deeper trouble if we don't do this." There's been problems with our quarters. This is a slum. There was just this ongoing problem of having to take the time to set up an organization. The office was formed out of the blue. There were no models anywhere in the world for an office like this. It's not like opening another department of microbiology.

SGR. Your official definition of misconduct cites "fabrication, falsification, and plagiarism." No problems with that, but doubts have been raised about the next category: "other practices that deviate from those that are commonly accepted within the scientific community for proposing, or conducting or reporting research."

Hallum. There may have to be changes in the definition. But regardless of the changes that are made, that phrase, or one very much like it, is going to be needed because there are things that happen that are not plagiarism, falsification, or fabrication. Where in that would you put corruption of the peer-review process?

SGR. In a report to his member societies in July, Robert J. Cousins, the President of FASEB [Federation of American Societies for Experimental Biology] has stirred up a couple of thousand letters against the regulations proposed for OSI.

Hallum. The information that was provided to the scientists about the need for their comments was—a lot of it was half-truths, a lot of it was not so, and a lot of it was straw man.

SGR. Did the President of FASEB misrepresent the situation to the membership?

Hallum. I believe so.

Price. One of the things that was personally an affront to me and to Clyde [Watkins]—we've both been longtime members of FASEB—was the allegation in the letter that the OSI is being run by bureaucrats who are not scientists. That is not true. Dr. Hallum and the rest of us are scientists. We came out of university and government research backgrounds, and we still consider ourselves to be scientists. We're doing this for the scientific community.

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DC Science Writers Blaze New Path to Hospitality

In the course of their duties, reporters often dine out as guests at the mealtime meetings of the organizations they cover. But the hospitality tradition has been carried one step further by the Washington-area DC Science Writers Association (DCSWA), whose 225 members include some of the luminaries of the science-writing trade.

For the occasional get-togethers of its membership, DCSWA has followed a practice of soliciting the hospitality of many of the major science-related organizations in the capital area. The latest soiree in the history of the three-year-old DCSWA (voiced as Duks-wa) took place on September 19 at the expense of the Howard Hughes Medical Institute, the multi-billion-dollar goliath of medical-research philanthropy.

At a cost reported by Hughes of \$26 per head for dinner and drinks, Hughes entertained 55 members of DCSWA. The menu, SGR is informed, included wine and beer before dinner, followed by chicken with mushroom sauce, baked fish, vegetables and rice, salad, chocolate ice cream mold with berries, and wine. Included in the evening were talks on medical research by two Hughes fellows, Jeremy Nathans, of Johns Hopkins University, and Barry Bloom, of the Albert Einstein College of Medicine. The setting was the "Cloisters," a building on the National Institutes of Health campus, in Bethesda, Md., handsomely refurbished by Hughes mainly for a joint medical fellowship program with NIH.

Since science, like other interests on the public scene, regularly courts the press in quest of favorable attention, solicitations to entertain a batch of science writers are not received as bad news. Previous hosts of DCSWA include the National Academy of Sciences, the National Science Foundation, the American Association for the Advancement of Science, the National Geographic Society, and the House Science, Space, and Technology Committee. The sessions are usually addressed by leading figures in science.

DCSWA, with annual membership dues of \$10, sets a "cover charge" of \$5-\$10 per meeting. On some occasions,

DCSWA has paid the whole bill for its members' refreshments, on others it shares costs with the hosts, and on still others, the host pays all, according to Joseph Palca, of *Science*, a founder and past President of DCSWA.

Prior to the Hughes festivities, the propriety of accepting the hospitality was discussed at a meeting of the DCSWA board. According to a report in the DCSWA newsletter, the discussion was precipitated by a letter in July from a DCSWA member who has attended several of these hosted meetings, SGR Editor Greenberg. The Greenberg letter noted that DCSWA was planning to meet July 16 at the headquarters of the National Science Foundation, and that DCSWA's announcement of the meeting stated that "NSF is providing the food."

Noting other DCSWA meetings hosted by scientific organizations, the letter stated, "Now, I doubt that anyone's journalistic vision has been affected by this hospitality, or that our hosts are inspired by a belief that it might be. But at the very least, the solicitation and acceptance of favors from organizations we write about does raise the issue of appearance."

The issue was discussed by DCSWA President David Wheeler, of the *Chronicle of Higher Education*, in the DCSWA newsletter, dated September 9, a week before the Hughes dinner:

Wheeler reported that "Ultimately, DCSWA ended up buying pizza after NSF decided its rules forbade it from picking up a food tab for reporters."

Referring to the notice of the meeting at NSF, Wheeler continued, "I made it a point in the last newsletter to avoid anyone thinking they had 'discovered' some kind of secret arrangement. I brought Dan's [Greenberg] letter to the DCSWA board's attention last week, and asked if we shouldn't turn over our [\$5] cover charge to Howard Hughes. The initial vote was close, but we ultimately decided to keep the money and left the [Hughes] institute paying for all food and

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Office of Scientific Integrity

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Hallum. What some of them are asking for, and they don't know the consequences, is an open hearing kind of investigation. That's this due-process consideration. I think that's going to be very dangerous to science. For one thing, it will be very expensive, and if we're forced into it and it's funded, the money will be coming from unfunded research grants.

There will be no protection for the whistle-blower, no protection for the reputation of the respondent. And another thing they haven't thought about is that if we're forced to that, then our procedures are the same as practically all the university [misconduct] procedures in the country. And then will less be expected of the universities, or will they have to go to an open court-like hearing, as well? I suspect

they will. The criticism that made me the most angry was the charge that we inhibit creative, new, and innovative research. That was a damned lie.

I challenge the head of that society to show me one case where we have inhibited research. He said we're teaching the young scientists to do only safe science, because they're so terrified of being investigated by us for doing something original. Why aren't they terrified of the local organization? They were defending the local investigations at the same time. Apparently, it's the geography that determines the ability to inhibit creativity. The same charge has been raised against the study sections, that this is the great force for orthodoxy in research. And I think that's baloney. That's what guys say when they come back to their department and say, "The only reason I didn't get my grant is I was just too creative for those guys."

... Survey Finds Science Writers a Different Breed

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drink. Other organizations, such as the *Washington Post* and the National Geographic Society, have paid for refreshments in the past. We hope the money put away from next week's event can ultimately be put to use sponsoring events featuring critics of the science establishment."

Wheeler later explained to SGR that the nest egg might be used for travel expenses to DCSWA meetings for so-called whistle-blowers and other "critics."

The integrity of science-writing is a controversial issue among its practitioners. The problems are highlighted in a report of a survey commissioned by the National Association of Science Writers (NASW), which is loosely associated with DCSWA and other local science-writer organizations. The survey, released last October, was summarized in an NASW press release which stated:

"The first large national survey of science reporters finds that, in many ways, they handle news and news sources very differently from the professed customs of colleagues who cover other beats. ...

"Despite broad journalistic codes that counsel against potential conflicts of interest, 43 percent of active members [i.e., writers and editors, as distinguished from NASW members in public relations] said they would consider accepting a freelance assignment from a group they might have to cover later for a news story.

"Similarly," the summary of the survey continued, "almost 40 percent of the active members would accept honoraria from groups they might cover. These include professional organizations, such as scientific societies, whose conferences, publications, or members are often the subject of stories.

"This was surprising," the summary concluded, "because news organizations are increasingly sensitive to conflicts of interest—or seeming conflicts of interest—among people they cover, including scientists, politicians, bankers, and other professionals."

The NASW survey also found that "the traditional 'scoop mentality' also seems less entrenched among science reporters. ..."—DSG

More In Print

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European projects have been substantially revamped since "NASA launched a further effort to descope *Freedom* in order to meet the demands of the US Congress to reduce substantially the cost. ..."

Order from: ESA Washington Office, 955 L'Enfant Plaza SW, Suite 7800, Washington, DC 20024; tel. 202/488-4158.

The US Aerospace Industry in the 1990s: A Global Perspective (145 pp., \$20 plus \$3.50 shipping in US and Canada; \$9 shipping elsewhere), from the Aerospace Industries Association, says the US aerospace industry remains strong, but faces booming foreign competition in the commercial sector, the area of growth now that defense is declining. The report, prepared by the Aerospace Research Center, states, "The United States does not yet have a coherent strategy to support industry on high-technology issues." And it warns that "In the years ahead, it will be difficult for NASA to do ambitious 'big ticket' projects." Among the topics covered in the report: aerospace industries in Western Europe, Japan, and the Pacific rim, the international space market, and technology trends and industrial strategies.

Order from: Aerospace Industries Association, 1250 Eye St. NW, Washington, DC 20005; tel. 202/371-8561.

Nutrition Monitoring: Mismanagement of Nutrition Survey Has Resulted in Questionable Data (GAO/RCED-91-117; 62 pp., no charge), by the General Accounting Office, investigative service for the Congress, finds nothing right in the Department of Agriculture's decennial Nation-

wide Food Consumption Survey, last conducted in 1987-88, at a cost of \$6.2 million. The survey, which heavily influences federal food-assistance programs, was designed to cover some 9600 households, but according to the GAO, the response rate, 34 percent, was "so low that it is questionable whether the data are representative of the US population." For interviews lasting about three hours, GAO reports, "household members were paid only \$2 to participate." In a rare expression of strong distaste, the GAO report asserts that the food survey "demonstrates how a federal contract should not be managed."

Order from: USGAO, PO Box 6015, Gaithersburg, Md.; tel. 202/275-6241.

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In Print: Foreign Aid, Bio-Rhythms, K-12 Reform

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New Opportunities for US Universities in Development Assistance: Agriculture, Natural Resources, and Environment (GPO Stock No. 052-003-01253-7; 99 pp., \$4.75), by the Congressional Office of Technology Assessment (OTA), says academic organizations have regularly experienced bureaucratic miseries in 40 years of trying to work with the US Agency for International Development (AID). But now, in OTA's optimistic view, AID has undergone a beneficial transformation keyed to the principle of "do fewer things, and do them very well." OTA doesn't explain why this aphoristic shift should make all that much difference. But it seems confident that AID's professed new emphasis on sustainable agriculture and good environmental practices will foster beneficial relations with academe. The OTA report traces the history of AID-academic ties, listing many of the institutions involved and their foreign partners.

Also from OTA: **Biological Rhythms: Implications for the Worker** (GPO Stock No. 052-003-01254-5; 249 pp., \$11), third in a series of OTA reports on "New Developments in Neuroscience," this one was requested by five Congressional committees, an unusually large number, reflecting a surprising degree of interest in the subject. Noting that 20 million Americans work "outside the standard daytime hours," OTA says that topsy-turvy schedules can produce disruptive biological effects that, in turn, can affect job performance and public safety. Data on the health problems of shift workers are pretty spotty, OTA adds, adding that the subject has generally been neglected by the research establishment. OTA lists a flock of options for federal agencies, including convening "of a national commission of non-governmental experts on biological rhythms, work schedules, and their effects."

The previous publications in the OTA neuroscience series:

Neurotoxicity: Identifying and Controlling Poisons of the Nervous System (April 1990; GPO Stock No. 052-003-01184-1; 350 pp., \$15).

Neural Grafting: Repairing the Brain and Spinal Cord (September 1990; GPO Stock No. 052-003-01212-0; 195 pp., \$10).

Order from: USGPO, Superintendent of Documents, Washington, DC 20402-9325; tel. 202/783-3238.

In the National Interest: The Federal Government in the Reform of K-12 Math and Science Education (76 pp., no charge), by the Carnegie Commission on Science, Technology, and Government, a call for a major mobilization of federal money and wit to promote high-quality science education from kindergarten through high school. The Commission, a blue-ribbon offshoot of the philanthropic Carnegie Corporation, suggests key roles for various agen-

cies: NSF to mobilize universities for the cause; the Department of Education to devise strategies and diffuse innovations; the Department of Labor to link educational reform to the job market; Defense to create model schools, and even NIH to pitch in to assure a flow of trained biomedical talent. NSF and the Department of Education, the report says, should create a Joint Office for Math and Science Improvement and they should also establish a National Center for Educational Systems Analysis. In tandem with these changes, the Commission calls for a great deal more federal money for K-12, both new funds and liberation of earmarked money in the Department of Education. The report was prepared by a panel chaired by Lewis Branscomb, head of the Science, Technology, and Public Policy Program, Kennedy School, Harvard.

Order from: Carnegie Commission on Science, Technology, and Government, 10 Waverly Place, New York, NY 10003; tel. 212/998-2150.

Winds of Change: Domestic Air Transportation Since Deregulation (399 pp., \$30, plus \$2 for international shipping), disputes, in great detail, the widespread impression that commercial air service has deteriorated and become more costly since deregulation. Not so, says the Committee for the Study of Air Passenger Service and Safety Since Deregulation, a creation of the Transportation Research Board at the National Academy of Sciences. The Committee, chaired by Joel L. Fleishman, Senior Vice President and Professor of Law, Duke University, was drawn from academe and various sectors of the airline industry. Major findings: service and safety have improved, fares have declined in real terms, and passenger volume has increased enormously. But the Committee warns that problems loom from the air industry's shaky financial condition and decreasing competition.

Order from: Transportation Research Board, National Academy of Sciences, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-3214.

European Space Agency: Annual Report 1990 (216 pp., no charge; limited supply), generously illustrated with color photos and diagrams, a detailed review of ESA programs, finances, governing structures, and long-term plans. Little is heard of ESA in the US, but with an annual budget of about \$2 billion, a busy commercial launch schedule, and the heavy-lift Ariane-V in an advanced stage of development, the 15-nation consortium has become a major space power. With about one-eighth the budget, ESA is a respectable second in space to the US, and who knows where it stands in relation to the space enterprise of the decomposed Soviet Union? Among the matters discussed in the report are ESA's planned links to the US Space Station *Freedom*—a free-flyer and an orbiting lab. The report notes that both

(Continued on Page 7)

